

**“COMMERCIALIZATION OF NUTRACEUTICALS TO ENHANCE
SUSTAINABLE AGRICULTURE IN LIMITED RESOURCE CARIBBEAN
FARMING COMMUNITIES”**

A Collaborative Effort Under the Direction of the National Nutraceutical Center, with the
University of Louisville, Clemson University, the Medical University of South Carolina,
and the University of Alabama at Birmingham

Revised Program Project

**Pre-proposal
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Executive Summary

The goal of this project is to empower Caribbean farming communities with the ability to identify, cultivate and grow economically important indigenous plants with commercial value as nutraceuticals or functional foods. Emphasis will be on identification of indigenous foods that have the potential to enhance wellness and prevent chronic inflammatory disease and its co-morbidities. The physical and intellectual resources offered by the four participating American institutions (the Consortium- Clemson University, University of Louisville, University of Alabama at Birmingham and the Medical University of South Carolina), are highly complementary and provide the expertise in agriculture, biotechnology, and food marketing to improve the economy of the Caribbean. In collaboration with the Caribbean Mission Office, government and community leaders, indigenous people, agricultural specialists and faculty from selected Caribbean institutions, the Consortium will establish a dynamic partnership with a focus on new agribusinesses and sustainable agriculture. As part of the Consortium's overall goal, Year 1 will focus on limited resource farming communities in Dominica (where a Consortium presence has already been established) to help growers identify and cultivate high value indigenous plants. These activities will be expanded in subsequent years to include other Caribbean islands and will use the outreach and expertise of faculty in the University of the West Indies (Natural Products Institute) and agricultural specialists in the Caribbean Mission.

The specific aims of this project are to:

- 1) *Provide government officials and agricultural specialists with the equipment, technical assistance, education and training needed to identify high value indigenous plants with unique nutritional and/or medicinal properties.*
- 2) *Provide community leaders and limited resource growers with the training and expertise needed to cultivate and grow selected indigenous plants using good agricultural practices to protect the environment.*
- 3) *Provide for the sustainable use of biological resources through government sanctioned agreements with the nutraceutical and functional food industry for the sale of high value nutraceuticals and functional foods.*
- 4) *Expand economic opportunities in new and related agribusinesses through development of vertically integrated processes in cultivation, refinement and manufacturing.*
- 5) *Protect valuable ecosystems by strengthening conservation policies in communities where indigenous plants with unique nutritional and medicinal value are found.*

The National Nutraceutical Center (NNC) will be responsible for program management and will coordinate the activities of U.S. and Caribbean consortium partners. An advisory council will be formed to help with the implementation of new initiatives and will ensure compliance with all issues contained in the *Convention on Biological Diversity*. The Advisory Council for Dominica will include representatives from i) the Carib Indian Reservation; ii) the Ministry of Agriculture and the Environment; iii) the farming community (including local agronomists, herbalists, and conservationists); and iv) the

academic community (including biomedical and agricultural specialists from Dominica State College, Ross University School of Medicine, and the Dominica Academy of Arts and Sciences). An appointed “on-site” program manager at the Archbold Tropical Research and Education Center will coordinate local activities with the Caribbean Mission Office in Barbados.

I. Program Rationale

The tropical ecosystems of the Caribbean offer unique opportunities for the development of nutraceuticals and functional foods, which can improve nutrition and prevent chronic inflammatory disease and its co-morbidities. Indigenous populations such as the Carib Indians and those involved in ethno-medicine already know many of these; however, there is a relative lack of research sophistication, equipment, training and expertise required to develop this knowledge and to enter the very lucrative North American and European natural health and functional foods market with scientifically validated products. *Commercialization and cultivation of high value functional foods and nutraceuticals in the Caribbean will result in sustainable agriculture and conservation of biodiversity in limited resource farming communities.*

II. Goal and Specific Aims

The goal of this project is to empower Caribbean farming communities with the ability to identify, cultivate and grow economically important indigenous plants with commercial value as nutraceuticals or functional foods. Emphasis will be on identification of indigenous foods that have the potential to enhance wellness and prevent chronic inflammatory disease and its co-morbidities. The specific aims are to:

- 1) Provide government officials and agricultural specialists with the equipment, technical assistance, education and training needed to identify high value indigenous plants with unique nutritional and/or medicinal properties.
- 2) Provide community leaders and limited resource growers with the training and expertise needed to cultivate and grow selected indigenous plants using good agricultural practices to protect the environment.
- 3) Provide for the sustainable use of biological resources through government sanctioned agreements with the nutraceutical and functional food industry for the sale of high value nutraceuticals and functional foods.
- 4) Expand economic opportunities in new and related agribusinesses through development of vertically integrated processes in cultivation, refinement and manufacturing.
- 5) Protect valuable ecosystems by strengthening conservation policies in communities where indigenous plants with unique nutritional and medicinal value are found.